**Exemption No. 6708**

**UNITED STATES OF AMERICA**
**DEPARTMENT OF TRANSPORTATION**
**FEDERAL AVIATION ADMINISTRATION**
**RENTON, WASHINGTON 98055-4056**

In the matter of the petition of

**Construcciones Aeronauticas, S.A.**

for an exemption from § 25.571(e)(1), Amendment 25-72, of Title 14, Code of Federal Regulations

**Regulatory Docket No. 28946**

## GRANT OF EXEMPTION

By letter CT-3-C-TC5/SP/295-100 dated May 9, 1997, M. Munoz Baragano, Airworthiness & Certification Manager, Construcciones Aeronauticas, S.A. (CASA), Avenida de John Lenon S/N, Getafe, Madrid, Spain, petitioned for an exemption from the four pound bird strike requirement of 14 CFR § 25.571(e)(1) from "$V_C$ at sea level to 8,000 feet" in favor of "$V_C$ at sea level or .85 $V_C$ at 8,000 feet, whichever is more critical."

**Section of the FAR affected:**

Section 25.571(e)(1) requires that the airplane be capable of successfully completing a flight during which likely structural damage occurs as a result of impact with a four pound bird at $V_C$ at sea level to 8,000 feet.

**Related Sections of the FAR**

Section 25.631 requires that the empennage structure be designed to assure capability of continued safe flight and landing of the aircraft after impact with an 8-pound bird at $V_C$ at sea level.

Section 25.775 requires that the windshield panes directly in front of the pilots be able to withstand, without penetration, the impact of a 4-pound bird at $V_C$ at sea level.

**The petitioner's supportive information is as follows:**

The petitioner bases its request on FAA ANM-100 letter dated Dec. 9, 1992. In that letter, the FAA stated that it did not intend to make the bird strike criteria more stringent at altitude, and the Transport Standards Staff would look favorably upon requests for exemptions from the "$V_C$ at 8,000 feet" requirement of § 25.571(e)(1), as amended by Amendment 25-72, until the rule can be changed in a later amendment. The airplane must be capable of successfully completing a flight during which likely structural damage occurs as a result of impact with a four pound bird at whichever true airspeed is greater, $V_C$ at sea level or 0.85 $V_C$ at 8,000 feet. This coincides with the corresponding JAA regulatory requirement.

*EXTENT OF THE REQUESTED REGULATORY RELIEF*

Relief is sought to permit use of "$V_C$ at sea level or .85 $V_C$ at 8,000 feet, whichever is more critical," instead of the current § 25.571(e)(1) requirement to test from "$V_C$ at sea level to $V_C$ at 8,000 feet."

*PUBLIC INTEREST*

The granting of this exemption will be in the public interest because it will allow the CASA C-295 to select $V_C$ at sea level or 0.85 $V_c$ at 8,000 feet, whichever is greater, for certification to the four pound bird impact requirement. It was the intent of Amendment 25-72 to § 25.571(e)(1) to allow $V_C$ at sea level to be used as the likely operating speed except in those cases where the applicant purposely reduced $V_C$ at sea level to meet the bird strike requirements.

A summary of CASA's petition was published in the Federal Register on August 21, 1997 (62 FR 44511). No comments were received.

**The FAA's analysis/summary is as follows:**

The petitioner has requested relief from the requirement of § 25.571(e)(1) that the airplane must be capable of successfully completing a flight during which likely structural damage occurs as a result of impact with a four pound bird at $V_c$ at sea level to 8,000 feet. The original bird strike provision was adopted by Amendment 25-45 and required the bird impact to be at "likely operating speeds from sea level to 8,000 feet." The term "likely operating speed" was open to interpretation and causing confusion, so the FAA proposed a revision that would have required a specific structural design speed. The proposal was published as Notice 84-21

(49 FR 47358) on December 3, 1984. In that notice, the FAA proposed a single speed of $V_C$ at sea level, which was consistent with other bird strike requirements in §§ 25.631 and 25.775. One commenter to the proposal pointed out that an artificially low value of $V_C$ at sea level could be established for the sole purpose of reducing the bird impact speed. This would lead to unconservative impact airspeeds at lower altitudes where bird impacts are most likely. The FAA agreed and revised the final rule accordingly.

Most airplanes, except those with an artificially low $V_C$ at sea level, have a near constant value of $V_C$ knots equivalent airspeed (KEAS) from sea level to 8,000 feet. The same equivalent airspeed at 8,000 feet gives about a 13% increase in true airspeed above that at sea level. In Amendment 25-72, the FAA did not intend to make the rule more stringent at 8,000 feet than at sea level. The intent was to prevent an applicant from selecting an unrealistic value of $V_C$ at sea level.

In conclusion, the FAA has determined that the CASA C-295, upon compliance with the stated requirements, will meet the intent of the regulations with respect to the bird impact velocities defined in § 25.571(e)(1) as amended by Amendment 25-72.

In consideration of the foregoing, I find that a grant of exemption is in the public interest and will not affect the level of safety provided by the regulations. Therefore, pursuant to the authority contained in 49 U.S.C §§ 40113 and 44701, delegated to me by the Administrator (14 CFR § 11.53), CASA is hereby granted an exemption from the bird impact speed requirement of § 25.571(e)(1) of the Federal Aviation Regulations, to the extent necessary to permit certification of the CASA C-295 airplane using $V_C$ at sea level, or .85 $V_C$ at 8,000 ft., whichever is greater.

This exemption will remain in effect unless superseded or rescinded.

Issued in Renton, Washington, on December 12, 1997

/s/ Gilbert L. Thompson
Gilbert Thompson
Acting Manager, Transport Airplane Directorate
Aircraft Certification Service, ANM-100